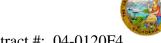
#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493



Contract #: 04-0120F4

Cty: SF/ALA Rte: 80 PM: 13.2/13.9

File #: 1.28

## WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter **Report No:** WIR-024317 Address: 333 Burma Road **Date Inspected:** 10-Jun-2011

City: Oakland, CA 94607

**Project Name:** SAS Superstructure **OSM Arrival Time:** 700 Prime Contractor: American Bridge/Fluor Enterprises, a JV **OSM Departure Time:** 1530

Contractor: American Bridge/Fluor Enterprises, a JV **Location:** Job Site

Pat Swain and John Pagliero **CWI Name: CWI Present:** Yes No **Inspected CWI report:** Yes N/A **Rod Oven in Use:** Yes No No N/A Yes N/A **Electrode to specification:** No Weld Procedures Followed: Yes No N/A N/A **Qualified Welders:** Yes No **Verified Joint Fit-up:** Yes No N/A N/A Yes No N/A **Approved Drawings:** Yes No **Approved WPS:** Yes N/A **Delayed / Cancelled:** No

34-0006 **Bridge No: Component: SAS** Tower

#### **Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower Shear Plate to Diaphragm Plate, elevation 9 meters;

At Tower Base Shear Plate (80mm) to Diaphragm Plate (45mm) weld joint #029 (1 of 8), this QA Inspector randomly observed ABF personnel James Zhen continuing to perform production 1G welding on the Partial Joint Penetration (PJP) of T-joint between the 80mm thick shear plate and 45mm thick diaphragm plate. The welder was using the dual shielded Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. This QA Inspector observed ABF personnel using Miller Proheat 35 Induction Heating System to preheat the plates being welded prior to and after welding. This QA Inspector observed QC Inspector Pat Swain using a Fluke infra red temperature gauge to verify the preheat temperature of more than 325°F. This QA Inspector performed a verification of the welding parameters and observed 290 amperes and 24.4 volts with a travel speed of 408 mm per minute with equivalent heat input of 1.04 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. During the shift, the welder has completed the PJP weld joint and right after the completion of the weld joint, ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 325°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

## WELDING INSPECTION REPORT

(Continued Page 2 of 3)

At Tower Shear Plate to Diaphragm Plate, elevation 9 meters;

At Tower Base Shear Plate (80mm) to Diaphragm Plate (45mm) weld joint #029 (7 of 8), this QA Inspector randomly observed ABF personnel Hua Qiang Hwang continuing to perform production 1G welding on the Partial Joint Penetration (PJP) of T-joint between the 60mm thick shear plate and 45mm thick diaphragm plate. The welder was using the dual shielded Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. This QA Inspector observed ABF personnel using Miller Proheat 35 Induction Heating System to preheat the plates being welded prior to and after welding. This QA Inspector observed QC Inspector Pat Swain using a Fluke infra red temperature gauge to verify the preheat temperature of more than 325°F. This QA Inspector performed a verification of the welding parameters and observed 292 amperes and 24.5 volts with a travel speed of 490 mm per minute with equivalent heat input of 0.87 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. During the shift, the welder has completed the PJP weld joint and right after the completion of the weld joint, ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 325°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

At OBG 10W/11W side plate 'C1' (2640mm to 5278mm) inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 continuing to perform CJP groove (splice) welding root pass to fill pass on the splice butt joint. The welder was observed perform automatic welding in the 3G (vertical) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3042B-1. The joint being welded has a single V-groove butt joint with backing bar. The splice joint was preheated and maintained to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blankets located at the opposite side of the plate prior/during welding. Prior welding, the welder has waited until the ABF bolting personnel have removed the temporary WT stiffener connection plates so the welder has access to the butt joint to be welded. During welding, ABF Quality Control (QC) John Pagliero was noted monitoring the welding parameters of the welder. At the end of the shift, fill pass welding on the splice butt joint was still continuing and should remain Monday.





# WELDING INSPECTION REPORT

(Continued Page 3 of 3)



## **Summary of Conversations:**

No significant conversation ocurred today.

### **Comments**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

| <b>Inspected By:</b> | Lizardo, Joselito | Quality Assurance Inspector |
|----------------------|-------------------|-----------------------------|
| Reviewed By:         | Levell,Bill       | QA Reviewer                 |